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10/601,616	06/23/2003	Timothy A. McCollum	GLOLP0108USG	8842

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EXAMINER	
HAN, JASON	

ART UNIT	PAPER NUMBER
2875	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/601,616	MCCOLLUM ET AL.	
	Examiner	Art Unit	
	Jason M Han	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-79* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-79* is/are rejected.

7)☒ Claim(s) *4,33,37,51 and 58* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. This application repeats a substantial portion of prior Application No. 09/256275, filed 02/23/1999, now US Patent 6712481, which is a continuation-in-part of Application No. 08/778089, filed 01/02/1997, now US Patent 6079838, which is a divisional of Application No. 08/495176, now US Patent 5613751, and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. The disclosure is objected to because of the following informalities:

a. Page 11, Line 7 – misspelling – "moire".

Appropriate correction is required.

Claim Objections

4. Claims 4, 37, and 51 are objected to because of the following informalities: It is unclear to the examiner how the "at least one light output distribution is located in another light output distribution of the panel member". The examiner has assumed that

the applicant is referring to multiple output distributions, whereby another output distribution is located elsewhere on the panel member. Please rewrite the limitation to further define another light output distribution, or please provide further elucidation so as to render a clear interpretation for the examiner. Appropriate correction is required.

5. Claim 33 is objected to because of the following informalities: In Line 4 of the claim, "lest" should read as "least". Appropriate correction is required.

6. Claim 58 is objected to because of the following informalities: Please revise with respect to the terms, "at least," since the applicant is claiming multiple patterns, surface areas, and output distributions. It is clear that with a plurality there is no need for using the term "at least". Please positively claim and limit by clearly defining the invention. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hardesty (U.S. Patent 2831453).

8. With regard to Claims 1-3, Hardesty discloses a light emitting panel [Figure 2: (3)] having:

- an input edge [Figure 2: (16)] for receiving light from at least one light source [Figure: (17)];

- at least one pattern of individual optical deformities [Figure 2: (12b)] on at least one surface area of the panel member for producing at least one light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member, and wherein some of the deformities have at least one well defined surface;
- the at least one output distribution having a form and/or shape of at least one of text, graphics, logo, or image [Figure 2: (18); Column 4, Lines 56-61].

9. With regards to Claim 4, Hardesty teaches at least one light output distribution [Figure 2: (25, 26)] located in another light output distribution of the panel member to create an "other effect" in the other output distribution.

10. With regards to Claim 11, Hardesty teaches another pattern of individual optical deformities [Figure 2: (20b)] on another surface area of the at least one panel member for producing another light output distribution [Figure 2: (25, 26)] from the panel member.

11. With regards to Claim 12, Hardesty teaches the another output distribution [Figure 2: (25, 26)] being substantially larger than the one output distribution [Figure 2: (18)].

12. With regards to Claim 13, Hardesty teaches at least one light output distribution [Figure 2: (25, 26)] located in another light output distribution of the panel member to create an "other effect" in the other output distribution.

13. Claims 36-37, 39, and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Hardesty (U.S. Patent 2831453).

14. With regards to Claim 36, Hardesty discloses a light emitting panel [Figure 2: (3)] having:

- an input edge [Figure 2: (16)] for receiving light from at least one light source [Figure: (17)];
- at least one pattern of individual optical deformities [Figure 2: (12b)] on at least one surface area of the panel member for producing at least one light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member, and wherein some of the deformities have at least one sloping surface that intersects the at least one surface area;
- the at least one output distribution having a form and/or shape of at least one of text, graphics, logo, or image [Figure 2: (18); Column 4, Lines 56-61].

15. With regards to Claim 37, Hardesty teaches at least one light output distribution [Figure 2: (25, 26)] located in another light output distribution of the panel member to create an "other effect" in the other output distribution.

16. With regards to Claim 39, Hardesty discloses the at least one sloping surface being planar [Figure 2: (12b)].

17. With regards to Claim 42, Hardesty discloses the at least one panel member having top and bottom surfaces, wherein the at least one pattern of individual optical deformities is on the bottom surface of the at least one panel member [Figure 2: (12b)].

18. With regards to Claim 43, Hardesty discloses the at least one panel member having more than two layers [Figure 2].

19. Claims 58-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Hardesty (U.S. Patent 2831453).

20. With regards to Claim 58, Hardesty discloses a light emitting panel [Figure 2: (3)] having:

- an input edge [Figure 2: (16)] for receiving light from at least one light source [Figure: (17)];
- one pattern of individual optical deformities [Figure 2: (12b)] on the surface area of the panel member for producing one light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member;
- the one output distribution having a form and/or shape of at least one of text, graphics, logo, or image [Figure 2: (18); Column 4, Lines 56-61];
- another pattern of individual optical deformities [Figure 2: (20b)] on another surface area of the panel member for producing another light output distribution [Figure 2: (25, 26)] from the panel member.

21. With regards to Claim 59, Hardesty teaches the another output distribution [Figure 2: (25, 26)] being substantially larger than the one output distribution [Figure 2: (18)].

22. With regards to Claim 60, Hardesty teaches the light output distribution [Figure 2: (25, 26)] located in another light output distribution of the panel member to create an "other effect" in the other output distribution.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pristash et al. (U.S. Patent 5005108) in view of Schöniger (U.S. Patent 5027258).

24. With regard to Claims 1-3, Pristash discloses a thin panel illuminator [Figure 1: (2)] having:

- an input edge [Figure 1: (4)] for receiving light from at least one light source [Figure 1: (3)];
- at least one pattern of individual optical deformities [Figure 1: (16)] on at least one surface area of the panel member for producing at least one light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member, and wherein some of the deformities have at least one well defined surface.

25. With regards to Claim 4, Pristash teaches multiple light output distributions [Figure 10: (77-79)].

26. With regards to Claim 5, Pristash teaches, "The light output pattern or uniformity of light output from these output regions 77-79 may be controlled by varying the shape, depth and frequency of the deformities 87 relative to the input light ray distribution [Column 6, Lines 11-15; underline added for emphasis]."

27. With regards to Claim 6, Pristash teaches, "The light output pattern or uniformity of light output from these output regions 77-79 may be controlled by varying the shape, depth and frequency of the deformities 87 relative to the input light ray distribution [Column 6, Lines 11-15; underline added for emphasis]."

28. With regards to Claim 7, Pristash teaches, "The light output pattern or uniformity of light output from these output regions 77-79 may be controlled by varying the shape, depth and frequency of the deformities 87 relative to the input light ray distribution [Column 6, Lines 11-15; underlines added for emphasis]." Pristash specifically teaches, "The angles and/or depth of these prismatic surfaces 32 may be varied along the length of the panel 30 to produce uniform or other desired light output from the other side 36 of the panel [Column 4, Lines 34-37; underline added for emphasis]."

29. With regards to Claim 8, Pristash teaches, "The light source 147 may also be designed to reduce output of infrared and ultraviolet radiation that may be harmful to the infant. In addition, such light source may be designed to provide sufficient illuminance and color rendering for inspection of an infant's skin color [Column 8, Lines 41-46; underlines added for emphasis]." It should further be noted that utilization of different color light sources in combination are commonly held in the art for producing a desired optical effect.

30. With regards to Claim 9, Pristash teaches at least one panel member having at least two input edges [Figure 10: (84, 85)] for receiving light from at least two light sources [Figure 10: (82, 83)] to obtain at least one output distribution.

31. With regards to Claim 11, Pristash teaches another pattern of individual optical deformities [Figure 10: (79)] on another surface area of the at least one panel member for producing another light output distribution from the panel member.

32. With regards to Claim 12, Pristash teaches the other output pattern [Figure 10: (79)] substantially larger than the one output distribution [Figure 10: (77 or 78)].

33. With regards to Claim 13, it is obvious that the additional output pattern of Pristash [Figure 10: (79)] will have an "other effect" on the another output distribution.

34. With regard to Claims 14-19, Pristash teaches, "The light output pattern or uniformity of light output from these output regions 77-79 may be controlled by varying the shape, depth and frequency of the deformities 87 relative to the input light ray distribution [Column 6, Lines 11-15]." Pristash further teaches, "The angles and/or depth of these prismatic surfaces 32 may be varied along the length of the panel 30 to produce uniform or other desired light output from the other side 36 of the panel [Column 4, Lines 34-37]." Please further note the Claims of Pristash.

35. With regards to Claim 27, Pristash teaches, "As will be apparent, the various thin panel illuminators disclosed herein may be used for a great many different applications, including for example general lighting, phototherapy treatment, and radiation curing of adhesives and epoxies and the like. Typical general lighting applications include back lighting of liquid crystal displays or transparencies or the like, task lighting, machine

vision lighting, safety lighting for both commercial and industrial as well as automotive applications, explosion-proof lighting, underwater lighting, display lighting and infrared heating and the like [Column 8, Lines 13-31; underline added for emphasis]."

36. With regard to Claims 32 and 34, Pristash teaches, "These diffuser surfaces 46 may vary in depth and/or width along the length of the panel 49, and may comprise a roughened surface, a lenticular surface, or a prismatic surface or the like that consists of multiple surface deformities [Column 4, Lines 60-64; underline added for emphasis]."

37. Pristash does not specifically teach the output distribution of the illuminator having a form and/or shape of at least one of text, graphics, logo, or image.

38. Schöniger discloses a light guide panel within an illuminated display unit such as a board with a house number thereon or an advertising billboard. Schöniger further teaches the light guide unit specifically illuminating logo symbols [see Abstract].

39. With regards to Claim 10, Schöniger teaches the illuminated display as cited above, wherein, "The illuminating elements in the form of LED(s) may more especially be in different colors as required for advertising purposes so that by switching the elements on and off or dimming them it is possible to produce a large number of different colors and hues by mixing effects. It is also possible to associate different light guide battens with different parts of the light guide panel, such light guide battens however respectively having a plurality of differently colored illuminating elements. As a result it is then possible to illuminate these different zones of the light guide panel in different variations in different colors, it also being possible to consider the dynamic lighting effects or the like [Column 3, Lines 22-35; underline added by examiner for

correction]." Motivation is thus provided in combining the multiple output distributions of Pristash with the multi-colored operation of Schöniger to produce an aesthetically pleasing display.

40. With regard to Claims 20-22, Schöniger teaches the illuminated display as cited above, wherein, "In the case of the second working embodiment of the invention depicted in FIG. 2 two light guide panels 10 are set in a parallel manner in the suitable grooves 11 of a broader light guide batten 12. Between these grooves 11 there is a further groove 18 in order to receive a contrast panel 19. The contrast panel 19 being arranged between the light guide panels 10. This makes it possible to create a display unit, whose symbols 13 may be read from either side thereof. For this purpose these display symbols 13 are respectively placed on the side facing of the contrast panel 19 of the light guide panel 10. It would obviously furthermore be possible to have different display symbols or logos 13 [Column 5, Lines 52-64; underlines added for emphasis]."

41. With regards to Claim 23, Schöniger teaches the illuminated display as cited above, wherein, "In this manner it is possible for the three zones 30 to 32 to be supplied with light by the respective three LED(s) 15 in the holding frame 23 independently of each other, that is to say for instance in three differing colors which are sequenced in accordance with a program [Column 7, Lines 36-41; underline added by examiner for correction]."

42. With regards to Claim 24, Schöniger teaches the illuminated display as cited above, wherein the output distribution of each of the panel members produces one or

more parts of a more complex output distribution that is visible through the panel members [note preceding paragraphs for Claims 20-23].

43. With regards to Claim 25, Schöniger teaches the illuminated display, as cited above in the rejections for Claims 20-24, and further teaches, "The light guide batten 12 in the holding frame 23 has eight LED's 15 arranged with a regular spacing therebetween. The number will be dependent on the size of the light guide panel 10, the desired intensity of illumination and on the light outputs of the individual LED's [Column 7, Lines 6-11; underline added for emphasis]."

44. With regards to Claim 26, Schöniger teaches the illuminated display, as cited above, further including a display/cover [Figure 5: (25)] overlying the panel members whereby the output distributions of the panel members are visible through the display/cover.

45. With regards to Claim 28, Schöniger teaches the illuminated display as cited above, further including at least one light redirecting film [Figure 2: (19); Figure 5: (24)] that allows different light output distributions to be seen when the panel members are viewed through the display from different angels [Column 5, Lines 57-68]. In addition, Pristash teaches, "a second prismatic film may be placed in closely spaced relation to the panel prismatic surface to redirect the emitted light rays toward a particular application [Column 1, Lines 39-42]." It should be noted that the structural limitation with respect to the redirecting film being disposed between the display and panel member is a matter of design preference and optical effect, whereby the above references are considered functionally equivalent. It is also commonly held in the art

that liquid crystal displays have a redirecting film disposed between the display and light guide/pipe.

46. With regards to Claim 29, Schöniger teaches the illuminated display, as cited above, further including a display/cover [Figure 5: (25)] overlying the panel members whereby the output distributions of the panel members are visible through the display/cover.

47. With regards to Claim 30, Schöniger teaches the illuminated display as cited above, further including at least one light redirecting film [Figure 2: (19); Figure 5: (24)] that allows different light output distributions to be seen when the panel members are viewed through the display from different angels [Column 5, Lines 57-68]. In addition, Pristash teaches, "a second prismatic film may be placed in closely spaced relation to the panel prismatic surface to redirect the emitted light rays toward a particular application [Column 1, Lines 39-42]." It should be noted that the structural limitation with respect to the redirecting film being disposed between the display and panel member is a matter of design preference and optical effect, whereby the above references are considered functionally equivalent. It is also commonly held in the art that liquid crystal displays have a redirecting film disposed between the display and light guide/pipe.

48. With regards to Claim 31, Schöniger teaches the illuminated display as cited above, further including at least one light redirecting film [Figure 2: (19); Figure 5: (24)] that allows different light output distributions to be seen when the panel members are viewed through the display from different angels [Column 5, Lines 57-68]. In addition,

Pristash teaches, "a second prismatic film may be placed in closely spaced relation to the panel prismatic surface to redirect the emitted light rays toward a particular application [Column 1, Lines 39-42]."

49. With regards to Claim 33, Schöniger teaches the illuminated display as cited above, wherein, "In the present case such light exit is caused by logo symbols 13, which are arranged on the rear face, i.e. the face furthest from the observer, of the light guide panel 10... Lastly is it principle possible to arrange opaque logo symbols on the front face of the panel, which then make a contrast with the light in the light guide panel [Column 4, Lines 25-38; underlines added for emphasis]." It should further be noted that it is commonly held in the art for a light guide, especially within liquid crystal displays, to have deformities on one side and an opposite side thereon of the light guide for optically affecting illumination.

50. With regards to Claim 35, Schöniger teaches the illuminated display as cited above, wherein there are multiple optical deformities for creating a complex output distribution [Figures 6-7; further note preceding paragraphs for Claims 20-23].

51. It would have been obvious to incorporate the thin panel illuminator of Pristash into the illuminated display of Schöniger in order to produce a more aesthetically pleasing, efficient, and compact display, whereby such light guide panels are commonly seen in the art.

It should further be noted that Schöniger teaches a light guide [Figure 1: (10)] having logo symbols [Figure 1: (13)], wherein the symbols are implicitly formed by deformities on a surface. To quote, "These logo symbols 13 may be in the form of

adhesively attached film, vapor coatings or the like. At the contact faces there is an exit of the light so that it illuminates the applied advertising symbols 13. As a matter of principle it is also (possible) to have logo symbols molded in the panel or more especially milled the same, so that the light leaves the panel at the milled surface and illuminates it [Column 4, Lines 28-35; underline added by examiner]."

52. Claims 36-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pristash et al. (U.S. Patent 5005108) in view of Schöniger (U.S. Patent 5027258).

53. With regards to Claim 36, Pristash discloses a thin panel illuminator [Figure 1: (2)] having:

- an input edge [Figure 1: (4)] for receiving light from at least one light source [Figure 1: (3)];
- at least one pattern of individual optical deformities [Figure 1: (16)] on at least one surface area of the panel member for producing at least one light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member, and wherein some of the deformities have at least one sloping surface that intersects the at least one surface area.

54. With regards to Claim 37, Pristash teaches multiple light output distributions [Figure 10: (77-79)].

55. With regards to Claim 38, Pristash teaches, "The light output pattern or uniformity of light output from these output regions 77-79 may be controlled by varying the shape,

depth and frequency of the deformities 87 relative to the input light ray distribution [Column 6, Lines 11-15; underline added for emphasis]."

56. With regards to Claim 39, Pristash teaches the at least one sloping surface being planar [Figure 5].

57. With regards to Claim 40, Pristash teaches the at least one sloping surface being curved [Figure 14: (116)].

58. With regard to Claims 41-42, Pristash teaches the pattern of individual optical deformities being on the top and bottom surfaces [Figures 11-14].

59. With regards to Claim 43, Pristash teaches the panel member having multiple layers [Figure 14].

60. Pristash does not specifically teach the output distribution of the illuminator having a form and/or shape of at least one of text, graphics, logo, or image.

61. Schöniger discloses a light guide panel within an illuminated display unit such as a board with a house number thereon or an advertising billboard. Schöniger further teaches the light guide unit specifically illuminating logo symbols [see Abstract].

62. With regards to Claim 44, Schöniger teaches the illuminated display as cited above, wherein, "The illuminating elements in the form of LED(s) may more especially be in different colors as required for advertising purposes so that by switching the elements on and off or dimming them it is possible to produce a large number of different colors and hues by mixing effects. It is also possible to associate different light guide battens with different parts of the light guide panel, such light guide battens however respectively having a plurality of differently colored illuminating elements. As a

result it is then possible to illuminate these different zones of the light guide panel in different variations in different colors, it also being possible to consider the dynamic lighting effects or the like [Column 3, Lines 22-35; underline added by examiner for correction]."

63. It would have been obvious to incorporate the thin panel illuminator of Pristash into the illuminated display of Schöniger in order to produce a more aesthetically pleasing, efficient, and compact display, whereby such light guide panels are commonly seen in the art.

It should further be noted that Schöniger teaches a light guide [Figure 1: (10)] having logo symbols [Figure 1: (13)], wherein the symbols are implicitly formed by deformities on a surface. To quote, "These logo symbols 13 may be in the form of adhesively attached film, vapor coatings or the like. At the contact faces there is an exit of the light so that it illuminates the applied advertising symbols 13. As a matter of principle it is also (possible) to have logo symbols molded in the panel or more especially milled the same, so that the light leaves the panel at the milled surface and illuminates it [Column 4, Lines 28-35; underline added by examiner].

64. Claims 45-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pristash et al. (U.S. Patent 5005108) in view of Schöniger (U.S. Patent 5027258).

65. With regard to Claims 45-50, Pristash discloses a thin panel illuminator [Figure 10: (80, 81)] having:

- input edges [Figure 10: (84, 85)] for receiving light from two light source [Figure 10: (82, 83)];

- at least one pattern of individual optical deformities [Figure 10: (77, 78, 79)] on at least one surface area of the panel member for producing at least one light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member.

66. With regards to Claim 51, Pristash teaches multiple light output distributions [Figure 10: (77-79)].

67. With regard to Claims 53 and 55, Pristash teaches, "These diffuser surfaces 46 may vary in depth and/or width along the length of the panel 49, and may comprise a roughened surface, a lenticular surface, or a prismatic surface or the like that consists of multiple surface deformities [Column 4, Lines 60-64; underline added for emphasis]."

68. With regards to Claim 57, Pristash teaches, "As will be apparent, the various thin panel illuminators disclosed herein may be used for a great many different applications, including for example general lighting, phototherapy treatment, and radiation curing of adhesives and epoxies and the like. Typical general lighting applications include back lighting of liquid crystal displays or transparencies or the like, task lighting, machine vision lighting, safety lighting for both commercial and industrial as well as automotive applications, explosion-proof lighting, underwater lighting, display lighting and infrared heating and the like [Column 8, Lines 13-31; underline added for emphasis]."

69. Pristash does not specifically teach the output distribution of the illuminator having a form and/or shape of at least one of text, graphics, logo, or image, and whereby the light sources are of different colors.

70. Schöniger discloses a light guide panel within an illuminated display unit such as a board with a house number or other logo symbols thereon, or an advertising billboard [see Abstract]. In addition, Schöniger further teaches, "The illuminating elements in the form of LED(s) may more especially be in different colors as required for advertising purposes so that by switching the elements on and off or dimming them it is possible to produce a large number of different colors and hues by mixing effects. It is also possible to associate different light guide battens with different parts of the light guide panel, such light guide battens however respectively having a plurality of differently colored illuminating elements. As a result it is then possible to illuminate these different zones of the light guide panel in different variations in different colors, it also being possible to consider the dynamic lighting effects or the like [Column 3, Lines 22-35; underline added by examiner for correction]." "These LED(s) may also be of different colors in order to produce different illuminating effects. In this case LED(s) turned on at the same time will produce different colors owing to the mixing of colors in the light guide batten or, respectively, in the light guide panel so that a wide variety of different colors is possible, this being more especially significant for advertising purposes. In this respect it is also possible to produce programmed sequences of light by varying the time the light sources are turned on and the brightness thereof [Column 7, Lines 12-22; underline added by examiner for correction]."

71. With regards to Claim 52, Schöniger teaches the illuminated display as cited above, wherein, "In the present case such light exit is caused by logo symbols 13, which are arranged on the rear face, i.e. the face furthest from the observer, of the light guide

panel 10... Lastly is it principle possible to arrange opaque logo symbols on the front face of the panel, which then make a contrast with the light in the light guide panel [Column 4, Lines 25-38; underlines added for emphasis]." It should further be noted that it is commonly held in the art for a light guide, especially within liquid crystal displays, to have deformities on one side and an opposite side thereon of the light guide for optically affecting illumination.

72. With regards to Claim 54, Schöniger teaches the illuminated display as cited above, further including at least one light redirecting film [Figure 2: (19); Figure 5: (24)] that allows different light output distributions to be seen when the panel members are viewed through the display from different angels [Column 5, Lines 57-68]. In addition, Pristash teaches, "a second prismatic film may be placed in closely spaced relation to the panel prismatic surface to redirect the emitted light rays toward a particular application [Column 1, Lines 39-42]."

73. With regards to Claim 56, Schöniger teaches the illuminated display, as cited above, further including a display/cover [Figure 5: (25)] overlying the panel members whereby the output distributions of the panel members are visible through the display/cover.

74. It would have been obvious to incorporate the thin panel illuminator of Pristash into the illuminated display of Schöniger in order to produce a more aesthetically pleasing, efficient, and compact display, whereby such light guide panels are commonly seen in the art. Further motivation and obviousness is also provided in combining the

multiple output distributions of Pristash with the multi-colored operation of Schöniger to produce an even more aesthetically pleasing display.

75. Claims 58-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pristash et al. (U.S. Patent 5005108) in view of Schöniger (U.S. Patent 5027258).

76. With regards to Claim 58, Pristash discloses a thin panel illuminator [Figure 10: (75)] having:

- input edges [Figure 10: (84, 85)] for receiving light from light sources [Figure 10: (82, 83)];
- one pattern of individual optical deformities [Figure 10: (77)] at one surface area of the panel member for producing a light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member;
- additional patterns of individual optical deformities creating multiple light output distributions [Figure 10: (78, 79)].

77. Pristash does not specifically teach the output distribution of the illuminator having a form and/or shape of at least one of text, graphics, logo, or image.

78. Schöniger discloses a light guide panel within an illuminated display unit such as a board with a house number thereon or an advertising billboard. Schöniger further teaches the light guide unit specifically illuminating logo symbols [see Abstract].

79. It would have been obvious to incorporate the thin panel illuminator of Pristash into the illuminated display of Schöniger in order to produce a more aesthetically

pleasing, efficient, and compact display, whereby such light guide panels are commonly seen in the art.

It should further be noted that Schöniger teaches a light guide [Figure 1: (10)] having logo symbols [Figure 1: (13)], wherein the symbols are implicitly formed by deformities on a surface. To quote, "These logo symbols 13 may be in the form of adhesively attached film, vapor coatings or the like. At the contact faces there is an exit of the light so that it illuminates the applied advertising symbols 13. As a matter of principle it is also (possible) to have logo symbols molded in the panel or more especially milled the same, so that the light leaves the panel at the milled surface and illuminates it [Column 4, Lines 28-35; underline added by examiner].

80. With regards to Claim 59, Pristash teaches the other output pattern [Figure 10: (79)] substantially larger than the one output distribution [Figure 10: (77 or 78)].

81. With regards to Claim 60, it is obvious that the additional output pattern of Pristash [Figure 10: (79)] will have an "other effect" on the another output distribution.

82. With regard to Claims 61-66, Pristash teaches, "The light output pattern or uniformity of light output from these output regions 77-79 may be controlled by varying the shape, depth and frequency of the deformities 87 relative to the input light ray distribution [Column 6, Lines 11-15]." Pristash further teaches, "The angles and/or depth of these prismatic surfaces 32 may be varied along the length of the panel 30 to produce uniform or other desired light output from the other side 36 of the panel [Column 4, Lines 34-37]." Please further note the Claims of Pristash.

83. Claims 67-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pristash et al. (U.S. Patent 5005108) in view of Schöniger (U.S. Patent 5027258).

84. With regard to Claim 67-69, Pristash discloses a thin panel illuminator [Figure 10: (75)] having:

- input edges [Figure 10: (84, 85)] for receiving light from light sources [Figure 10: (82, 83)];
- one pattern of individual optical deformities [Figure 10: (77)] at one surface area of the panel member for producing a light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member;
- additional patterns of individual optical deformities creating multiple light output distributions [Figure 10: (78, 79)].

85. With regards to Claim 74, Pristash teaches, "As will be apparent, the various thin panel illuminators disclosed herein may be used for a great many different applications, including for example general lighting, phototherapy treatment, and radiation curing of adhesives and epoxies and the like. Typical general lighting applications include back lighting of liquid crystal displays or transparencies or the like, task lighting, machine vision lighting, safety lighting for both commercial and industrial as well as automotive applications, explosion-proof lighting, underwater lighting, display lighting and infrared heating and the like [Column 8, Lines 13-31; underline added for emphasis]."

86. Pristash does not specifically teach the output distribution of the illuminator having a form and/or shape of at least one of text, graphics, logo, or image; nor does Pristash teach multiple panel members in combination to form a display.

87. Schöniger discloses light guide panels within an illuminated display unit such as a board with a house number or other logo symbols thereon, or an advertising billboard [see Abstract]. Schöniger further teaches, "In the case of the second working embodiment of the invention depicted in FIG. 2 two light guide panels 10 are set in a parallel manner in the suitable grooves 11 of a broader light guide batten 12. Between these grooves 11 there is a further groove 18 in order to receive a contrast panel 19. The contrast panel 19 being arranged between the light guide panels 10. This makes it possible to create a display unit, whose symbols 13 may be read from either side thereof. For this purpose these display symbols 13 are respectively placed on the side facing of the contrast panel 19 of the light guide panel 10. It would obviously furthermore be possible to have different display symbols or logos 13 [Column 5, Lines 52-64; underlines added for emphasis]."

88. With regards to Claim 70, Schöniger teaches the illuminated display as cited above, wherein, "In this manner it is possible for the three zones 30 to 32 to be supplied with light by the respective three LED(s) 15 in the holding frame 23 independently of each other, that is to say for instance in three differing colors which are sequenced in accordance with a program [Column 7, Lines 36-41; underline added by examiner for correction]."

89. With regards to Claim 71, Schöniger teaches the illuminated display as cited above, wherein the output distribution of each of the panel members produces one or more parts of a more complex output distribution that is visible through the panel members [note preceding paragraphs for Claims 67-70].

90. With regards to Claim 72, Schöniger teaches the illuminated display, as cited above in the rejections for Claims 20-24, and further teaches, "The light guide batten 12 in the holding frame 23 has eight LED's 15 arranged with a regular spacing therebetween. The number will be dependent on the size of the light guide panel 10, the desired intensity of illumination and on the light outputs of the individual LED's [Column 7, Lines 6-11; underline added for emphasis]."

91. With regards to Claim 73, Schöniger teaches the illuminated display, as cited above, further including a display/cover [Figure 5: (25)] overlying the panel members whereby the output distributions of the panel members are visible through the display/cover.

92. With regards to Claim 75, Schöniger teaches the illuminated display as cited above, further including at least one light redirecting film [Figure 2: (19); Figure 5: (24)] that allows different light output distributions to be seen when the panel members are viewed through the display from different angels [Column 5, Lines 57-68]. In addition, Pristash teaches, "a second prismatic film may be placed in closely spaced relation to the panel prismatic surface to redirect the emitted light rays toward a particular application [Column 1, Lines 39-42]." It should be noted that the structural limitation with respect to the redirecting film being disposed between the display and panel

member is a matter of design preference and optical effect, and whereby the above references are considered functionally equivalent. It is also commonly held in the art that liquid crystal displays have a redirecting film disposed between the display and light guide/pipe.

93. It would have been obvious to incorporate the thin panel illuminator of Pristash into the illuminated display of Schöniger in order to produce a more aesthetically pleasing, efficient, and compact display, whereby such light guide panels are commonly seen in the art.

It should further be noted that Schöniger teaches a light guide [Figure 1: (10)] having logo symbols [Figure 1: (13)], wherein the symbols are implicitly formed by deformities on a surface. To quote, "These logo symbols 13 may be in the form of adhesively attached film, vapor coatings or the like. At the contact faces there is an exit of the light so that it illuminates the applied advertising symbols 13. As a matter of principle it is also (possible) to have logo symbols molded in the panel or more especially milled the same, so that the light leaves the panel at the milled surface and illuminates it [Column 4, Lines 28-35; underline added by examiner].

94. Claims 76-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pristash et al. (U.S. Patent 5005108) in view of Schöniger (U.S. Patent 5027258).

95. With regards to Claim 76, Pristash discloses a thin panel illuminator [Figure 10: (75)] having:

- input edges [Figure 10: (84, 85)] for receiving light from light sources [Figure 10: (82, 83)];

- one pattern of individual optical deformities [Figure 10: (77)] at one surface area of the panel member for producing a light output distribution from the panel member, whereby each of the deformities has a length and width that is quite small in relation to the length and width of the panel member;
- additional patterns of individual optical deformities creating multiple light output distributions [Figure 10: (78, 79)].

96. With regard to Claims 78-79, Pristash teaches, as cited in the rejection for Claim 76 above, multiple deformities that are separate and distinct from one another [Figure 10]. It is also obvious that these separate output distributions created by the deformities are separately viewable through the panel member from different angles [please further note Figure 6: (13) of Schöniger].

97. Pristash does not specifically teach the output distributions of the illuminator having a form and/or shape of at least one of text, graphics, logo, or image.

98. Schöniger discloses a light guide panel within an illuminated display unit such as a board with a house number thereon or an advertising billboard. Schöniger further teaches the light guide unit specifically illuminating logo symbols [see Abstract].

99. With regards to Claim 77, Schöniger teaches the illuminated display as cited above, wherein there are multiple optical deformities for creating a composite complex output distribution [Figures 6-7; further note preceding paragraphs for Claims 20-23].

100. It would have been obvious to incorporate the thin panel illuminator of Pristash into the illuminated display of Schöniger in order to produce a more aesthetically

pleasing, efficient, and compact display, whereby such light guide panels are commonly seen in the art.

It should further be noted that Schöniger teaches a light guide [Figure 1: (10)] having logo symbols [Figure 1: (13)], wherein the symbols are implicitly formed by deformities on a surface. To quote, "These logo symbols 13 may be in the form of adhesively attached film, vapor coatings or the like. At the contact faces there is an exit of the light so that it illuminates the applied advertising symbols 13. As a matter of principle it is also (possible) to have logo symbols molded in the panel or more especially milled the same, so that the light leaves the panel at the milled surface and illuminates it [Column 4, Lines 28-35; underline added by examiner].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references have been cited to further show the state of the art pertinent to the current application:

US Patent 2071239 to Birdsall et al.;
US Patent 2095558 to Oberacker;
US Patent 2262930 to Gasper;
US Patent 2374323 to Alphonse;
US Patent 2810225 to Hardesty;
US Patent 3491245 to Hardesty;
US Patent 3590509 to Fukumitsu;
US Patent 3665626 to Lund et al.;
US Patent 3906650 to Coffman;
US Patent 4043636 to Eberhardt et al.;
US Patent 4183628 to Laesser et al.;
US Patent 4257084 to Reynolds;
US Patent 4271408 to Teshima et al.;
US Patent 4310219 to Jaccard;
US Patent 4385343 to Plumly;
US Patent 4763984 to Awai et al.;

US Patent 4791540 to Dreyer et al.;
US Patent 4811507 to Blanchet;
US Patent 4845596 to Mouissie;
US Patent 4885663 to Parker;
US Patent 4890201 to Toft;
US Patent 4907132 to Parker;
US Patent 4961617 to Shahidi et al.;
US Patent 4978952 to Irwin;
US Patent 5009019 to Erlendsson et al.;
US Patent 5009483 to Rockwell;
US Patent 5036435 to Tokuda et al.;
US Patent 5050946 to Hathaway et al.;
US Patent 5070431 to Kitazawa et al.;
US Patent 5079675 to Nakayama;
US Patent 5106181 to Rockwell;
US Patent 5124890 to Choi et al.;
US Patent 5136480 to Pristash et al.;
US Patent 5165187 to Shahidi-Hamedani et al.;
US Patent 5283673 to Murase et al.;
US Patent 5377084 to Kojima et al.;
US Patent 5386347 to Matsumoto;
US Patent 5396350 to Beeson et al.;
US Patent 5414947 to Hjaltason;
US Patent 5428468 to Zimmerman et al.;
US Patent 5444932 to Jeroma;
US Patent 5536558 to Shelton;
US Patent 5555329 to Kuper et al.;
US Patent 5576078 to Schatz;
US Patent 5598281 to Zimmerman et al;
US Patent 5150965 to Fox.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH

JOHN ANTHONY WARD
PRIMARY EXAMINER